

CLAIMS:

The embodiments of an invention in which an exclusive property or right is claimed are defined as follows:

1. A semiconductor assembly, comprising:
a submount having a plurality of conductive traces on a surface and a plurality of conductive vias that pass through a body of the submount;
a semiconductor array comprised of semiconductor elements, said semiconductor array attached to said submount such that the semiconductor elements are electrically connected to a plurality of conductive vias; and
a plurality of bonding wires electrically connecting the semiconductor elements to at least two of the conductive traces.
2. A semiconductor assembly according to claim 1, wherein said semiconductor array includes a plurality of vertical cavity surface emitting lasers.
3. A semiconductor assembly according to claim 1, wherein said semiconductor array includes a plurality of detectors.
4. A semiconductor assembly according to claim 1, wherein said submount includes a mounting well, wherein said semiconductor array is in said mounting well, and wherein said semiconductor array includes a top surface that does not protrude from said mounting well.

5. A semiconductor assembly according to claim 1, wherein each of the conductive traces includes a contact pad.

6. A semiconductor assembly according to claim 5, further including a tab bonding connector electrically connected to a plurality of contact pads.

7. A semiconductor assembly according to claim 1, further including a locating spacer that extends from said submount.

8. A semiconductor assembly according to claim 7, further including an optical coupler on said locating spacer, wherein said optical coupler is aligned with said semiconductor array.

9. A semiconductor assembly according to claim 1, wherein said submount includes ceramic.

10. A semiconductor assembly according to claim 1, wherein at least one of said plurality of conductive vias electrically connects to one of the conductive traces.

11. A semiconductor assembly according to claim 1, further including a conductive pad electrically connected to one of the conductive traces.

12. A semiconductor assembly according to claim 11, further including a printed circuit board electrically connected to said conductive pad.

13. A semiconductor assembly, comprising:

a submount comprised of a lower portion, a conductive trace on the lower portion, an upper portion over the lower portion, and a plurality of conductive traces on the upper portion, wherein the lower portion and the conductive trace on the lower portion extend beyond the upper portion to define a mounting surface;

a semiconductor array comprised of a plurality of semiconductor elements, said semiconductor array being attached to said mounting surface and is electrically connected to the conductive trace on the lower portion; and

a plurality of bonding wires electrically connecting the plurality of semiconductor elements to the plurality of conductive traces on the upper portion.

14. A semiconductor assembly according to claim 13, wherein said semiconductor array includes a plurality of vertical cavity surface emitting lasers.

15. A semiconductor assembly according to claim 13, wherein said semiconductor array includes a plurality of detectors.

16. A semiconductor assembly according to claim 13, wherein each of said plurality of conductive traces on the upper portion includes a contact pad.

17. A semiconductor assembly according to claim 16, further including a tab bonding connector electrically connected to the contact pad.

18. A semiconductor assembly according to claim 13, further including a locating spacer that extends from said submount.

19. A semiconductor assembly according to claim 18, further including an optical coupler on said locating spacer, wherein said optical coupler is aligned with said semiconductor array.

20. A semiconductor assembly according to claim 13, wherein said submount includes ceramic.

21. A semiconductor assembly according to claim 13, further comprising:
a plurality of contact pads on the submount; and
a printed circuit board electrically connected to the plurality of contact pads.

22. A semiconductor assembly according to claim 13, wherein said submount includes a mounting well, wherein said semiconductor array is in said mounting well, and wherein said semiconductor array includes a top surface that does not protrude from said mounting well.